



**Part Number: 3633**

**CAT6++ Horizontal Bonded-Pair, 4pr, UTP, LS-PVC Jkt, CMP**

**Product Description**

CAT6++ (400MHz), 4-Bonded-pairs, U/UTP-unshielded, Plenum-CMP, Premise Horizontal cable, 23 AWG solid bare copper conductors, FEP insulation, patented X-spline, ripcord, Flamarrest® PVC jacket.

**Technical Specifications**

**Product Overview**

|                        |   |
|------------------------|---|
| Environmental Space:   | Plenum  |
| Suitable Applications: | Premise Horizontal Cable, Gigabit Ethernet, POE, POE+, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU Digital Audio, AES51, RS-422, Noisy Environments |

**Physical Characteristics (Overall)**

**Conductor**

| AWG | Stranding | Material         | No. of Pairs |
|-----|-----------|------------------|--------------|
| 23  | Solid     | BC - Bare Copper | 4            |

|                        |        |
|------------------------|--------|
| Conductor Count:       | 8      |
| Total Number of Pairs: | 4      |
| Conductor Size:        | 23 AWG |

**Insulation**

|                 |                                      |
|-----------------|--------------------------------------|
| <b>Material</b> | FEP - Fluorinated Ethylene Propylene |
| Bonded-Pair:    | Yes                                  |

**Color Chart**

| Number | Color                        |
|--------|------------------------------|
| 1      | White/Blue Stripe & Blue     |
| 2      | White/Orange Stripe & Orange |
| 3      | White/Green Stripe & Green   |
| 4      | White/Brown Stripe & Brown   |

**Outer Jacket Material**

| Material                              | Material Trade Name | Nominal Diameter | Nominal Wall Thickness | Ripcord | Separator Material              |
|---------------------------------------|---------------------|------------------|------------------------|---------|---------------------------------|
| LS PVC - Low Smoke Polyvinyl Chloride | Flamarrest®         | 0.230 in         | 0.018 in               | Yes     | Patented X-Spline Center Member |

**Electrical Characteristics**

**Conductor DCR**

| Max. Conductor DCR | Max. DCR Unbalance |
|--------------------|--------------------|
| 77 Ohm/km          | 3 %                |

**Capacitance**

| Max. Capacitance Unbalance | Nom. Mutual Capacitance |
|----------------------------|-------------------------|
| 90 pF/100m                 | 15.5 pF/ft              |

**Delay**

| Frequency [MHz] | Max. Delay    | Max. Delay Skew | Nominal Velocity of Propagation (VP) [%] | Typical Delay Skew |
|-----------------|---------------|-----------------|--|--------------------|
| 100 MHz         | 537.6 ns/100m | 35 ns/100m      | 72 %                                     | 30 ns/100m         |

## High Freq

| Frequency [MHz] | Max. Insertion Loss (Attenuation) | Min. NEXT [dB] | Min. PSNEXT [dB] | Min. ACR [dB] | Min. PSACR [dB] | Min. ACRF (ELFEXT) [dB] | Min. PSACRF (PSELFEXT) [dB] | Min. RL (Return Loss) [dB] | Max./Min. Input Impedance (unFitted) | Max./Min. Fitted Impedance | Min. TCL [dB] | Min. ELTCTL [dB] |
|-----------------|-----------------------------------|----------------|------------------|---------------|-----------------|-------------------------|-----------------------------|----------------------------|--------------------------------------|----------------------------|---------------|------------------|
| 0.772 MHz       | 1.8 dB/100m                       | 81.0 dB        | 81.0 dB          | 79.2 dB       | 79.2 dB         | 75.0 dB                 | 73.0 dB                     |                            |                                      |                            | 42.0 dB       | 39.2 dB          |
| 1 MHz           | 2.0 dB/100m                       | 79.3 dB        | 79.3 dB          | 77.3 dB       | 77.3 dB         | 72.8 dB                 | 70.8 dB                     | 20.0 dB                    | 100 ± 12 Ohm                         | 100 ± 12 Ohm               | 42.0 dB       | 37.0 dB          |
| 4 MHz           | 3.7 dB/100m                       | 70.3 dB        | 70.3 dB          | 66.6 dB       | 66.6 dB         | 60.8 dB                 | 58.8 dB                     | 23.0 dB                    | 100 ± 12 Ohm                         | 100 ± 10.4 Ohm             | 42.0 dB       | 25.0 dB          |
| 8 MHz           | 5.2 dB/100m                       | 65.8 dB        | 65.8 dB          | 60.6 dB       | 60.6 dB         | 54.7 dB                 | 52.7 dB                     | 24.5 dB                    | 100 ± 12 Ohm                         | 100 ± 8 Ohm                | 42.0 dB       | 18.9 dB          |
| 10 MHz          | 5.8 dB/100m                       | 64.3 dB        | 64.3 dB          | 58.5 dB       | 58.5 dB         | 52.8 dB                 | 50.8 dB                     | 25.0 dB                    | 100 ± 12 Ohm                         | 100 ± 7.3 Ohm              | 42.0 dB       | 17.0 dB          |
| 16 MHz          | 7.4 dB/100m                       | 61.2 dB        | 61.2 dB          | 53.9 dB       | 53.9 dB         | 48.7 dB                 | 46.7 dB                     | 25.0 dB                    | 100 ± 12 Ohm                         | 100 ± 5.7 Ohm              | 40.0 dB       | 12.9 dB          |
| 20 MHz          | 8.3 dB/100m                       | 59.8 dB        | 59.8 dB          | 51.5 dB       | 51.5 dB         | 46.8 dB                 | 44.8 dB                     | 25.0 dB                    | 100 ± 12 Ohm                         | 100 ± 5 Ohm                | 39.0 dB       | 11.0 dB          |
| 25 MHz          | 9.3 dB/100m                       | 58.3 dB        | 58.3 dB          | 49.1 dB       | 49.1 dB         | 44.8 dB                 | 42.8 dB                     | 25.0 dB                    | 100 ± 15 Ohm                         | 100 ± 5 Ohm                | 38.0 dB       | 9.0 dB           |
| 31.25 MHz       | 10.4 dB/100m                      | 56.9 dB        | 56.9 dB          | 46.5 dB       | 46.5 dB         | 42.9 dB                 | 40.9 dB                     | 25.0 dB                    | 100 ± 15 Ohm                         | 100 ± 5 Ohm                | 37.1 dB       |                  |
| 62.5 MHz        | 15.0 dB/100m                      | 52.4 dB        | 52.4 dB          | 37.4 dB       | 37.4 dB         | 36.9 dB                 | 34.9 dB                     | 25.0 dB                    | 100 ± 15 Ohm                         | 100 ± 5 Ohm                | 34.0 dB       |                  |
| 100 MHz         | 19.3 dB/100m                      | 49.3 dB        | 49.3 dB          | 30.0 dB       | 30.0 dB         | 32.8 dB                 | 30.8 dB                     | 25.0 dB                    | 100 ± 15 Ohm                         | 100 ± 5 Ohm                | 32.0 dB       |                  |
| 155 MHz         | 24.6 dB/100m                      | 46.4 dB        | 46.4 dB          | 21.8 dB       | 21.8 dB         | 28.9 dB                 | 26.9 dB                     | 22.8 dB                    | 100 ± 15 Ohm                         | 100 ± 5 Ohm                | 30.1 dB       |                  |
| 200 MHz         | 28.3 dB/100m                      | 44.8 dB        | 44.8 dB          | 16.5 dB       | 16.5 dB         | 26.8 dB                 | 24.8 dB                     | 21.6 dB                    | 100 ± 15 Ohm                         | 100 ± 5 Ohm                | 29.0 dB       |                  |
| 250 MHz         | 32.1 dB/100m                      | 43.3 dB        | 43.3 dB          | 11.2 dB       | 11.2 dB         | 24.8 dB                 | 22.8 dB                     | 20.5 dB                    | 100 ± 20 Ohm                         | 100 ± 5 Ohm                | 28.0 dB       |                  |
| 300 MHz         | 35.6 dB/100m                      | 42.1 dB        | 42.1 dB          | 6.5 dB        | 6.5 dB          | 23.3 dB                 | 21.3 dB                     | 20.1 dB                    | 100 ± 20 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 350 MHz         | 38.9 dB/100m                      | 41.1 dB        | 41.1 dB          | 2.3 dB        | 2.3 dB          | 21.9 dB                 | 19.9 dB                     | 19.8 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 400 MHz         | 42.0 dB/100m                      | 38.3 dB        | 38.3 dB          | -3.7 dB       | -3.7 dB         | 20.8 dB                 | 18.8 dB                     | 19.5 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 450 MHz         | 45.0 dB/100m                      | 37.5 dB        | 37.5 dB          |               |                 | 19.7 dB                 | 17.7 dB                     | 18.9 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 500 MHz         | 47.9 dB/100m                      | 36.8 dB        | 36.8 dB          |               |                 | 18.8 dB                 | 16.8 dB                     | 18.4 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 550 MHz         | 50.6 dB/100m                      | 36.2 dB        | 36.2 dB          |               |                 | 18.0 dB                 | 16.0 dB                     | 18.0 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 600 MHz         | 53.3 dB/100m                      | 35.6 dB        | 35.6 dB          |               |                 | 17.2 dB                 | 15.2 dB                     | 17.5 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |
| 650 MHz         | 55.9 dB/100m                      | 35.1 dB        | 35.1 dB          |               |                 | 16.5 dB                 | 14.5 dB                     | 17.2 dB                    | 100 ± 22 Ohm                         | 100 ± 5 Ohm                |               |                  |

Segregation class according EN50174-2:

a

## Voltage

### UL Voltage Rating

300 V RMS

## Temperature Range

|                          |                |
|--------------------------|----------------|
| Installation Temp Range: | 0°C To +50°C   |
| UL Temp Rating:          | 105°C          |
| Storage Temp Range:      | -20°C To +75°C |
| Operating Temp Range:    | -20°C To +75°C |

## Mechanical Characteristics

|                                  |               |
|----------------------------------|---------------|
| Bulk Cable Weight:               | 31 lbs/1000ft |
| Max Recommended Pulling Tension: | 40 lbs        |
| Min Bend Radius/Minor Axis:      | 0.5 in        |
| Min Bend Radius/Installation:    | 2.5 in        |

## Standards

|                                       |   |
|---------------------------------------|---|
| NEC/(UL) Specification:               | CMP   |
| CEC/C(UL) Specification:              | CMP   |
| ISO/IEC Compliance:                   | 11801 ed 2.2 (2011) Class E                           |
| CPR Euroclass:                        | Eca   |
| Data Category:                        | Category 6  |
| ANSI Compliance:                      | S-116-732-2013 Category 6, ANSI/NEMA WC-66 Category 6 |
| Telecommunications Standards:         | ANSI/TIA-568-C.2 Category 6                           |
| IEEE Specification:                   | IEEE 802.3bt Type 1, Type 2, Type 3, Type 4           |
| Third Party Performance Verification: | Category 6  |

## Applicable Environmental and Other Programs

|                                |     |
|--------------------------------|-----|
| EU Directive 2000/53/EC (ELV): | Yes |
|--------------------------------|-----|

|  |            |
|--|------------|
| EU Directive 2002/96/EC (WEEE):        | Yes        |
| EU Directive 2003/11/EC (BFR):         | Yes        |
| EU Directive 2003/96/EC (BFR):         | Yes        |
| EU Directive 2011/65/EU (ROHS II):     | Yes        |
| EU Directive 2012/19/EU (WEEE):        | Yes        |
| EU Directive 2015/863/EU:              | Yes        |
| EU Directive Compliance:               | Yes        |
| EU CE Mark:                            | Yes        |
| EU REACH SVHC Compliance (yyyy-mm-dd): | 2017-07-10 |
| EU RoHS Compliance Date (yyyy-mm-dd):  | 2009-04-03 |
| CA Prop 65 (CJ for Wire & Cable):      | Yes        |
| MII Order #39 (China RoHS):            | Yes        |

## Suitability

|                                    |     |
|------------------------------------|-----|
| Suitability - Aerial:              | No  |
| Suitability - Burial:              | No  |
| Suitability - Hazardous Locations: | No  |
| Suitability - Indoor:              | Yes |
| Suitability - Non-Halogenated:     | No  |
| Suitability - Oil Resistance:      | No  |
| Suitability - Outdoor:             | No  |
| Suitability - Sunlight Resistance: | No  |

## Flammability, LS0H, Toxicity Testing

|                     |                          |
|---------------------|--------------------------|
| C(UL) Flammability: | FT6                      |
| UL Flammability:    | NFPA 262 Plenum (UL 910) |
| CSA Flammability:   | FT6                      |
| UL voltage rating:  | 300 V RMS                |

## Plenum/Non-Plenum

|               |     |
|---------------|-----|
| Plenum (Y/N): | Yes |
|---------------|-----|

## Part Number

|                    |      |
|--------------------|------|
| Non-Plenum Number: | 3632 |
|--------------------|------|

## Variants

| Item #        | Color  | Footnote |
|---------------|--------|----------|
| 3633 0101000  | Black  | C        |
| 3633 010A1000 | Black  | C        |
| 3633 D151000  | Blue   | C        |
| 3633 D15A1000 | Blue   | C        |
| 3633 D15U1000 | Blue   |          |
| 3633 0081000  | Gray   | C        |
| 3633 008A1000 | Gray   | C        |
| 3633 008U1000 | Gray   |          |
| 3633 0051000  | Green  | C        |
| 3633 005A1000 | Green  | C        |
| 3633 0031000  | Orange | C        |
| 3633 003A1000 | Orange | C        |
| 3633 0021000  | Red    | C        |
| 3633 002A1000 | Red    | C        |
| 3633 0091000  | White  | C        |
| 3633 009A1000 | White  | C        |
| 3633 009U1000 | White  |          |
| 3633 0041000  | Yellow | C        |
| 3633 004A1000 | Yellow | C        |

|           |   |
|-----------|---|
| Footnote: | C - CRATE REEL PUT-UP.  |
| Patent:   | <a href="https://www.belden.com/resources/patents">https://www.belden.com/resources/patents</a> |

## Product Notes

|        |   |
|--------|---|
| Notes: | Values above 400 MHz are for Engineering Information Only. Print Includes Descending Footage/Meter Markings from Max. Put-Up Length to 0. |
|--------|---|

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